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Multimedia Compliance Investigation

Norlite, LLC
Cohoes, New York

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APPENDICES (*NEIC-created Document)

Clean Air Act Appendices

CAA A	Comprehensive Performance Test and Notification of Compliance (1,159 pages)
CAA B*	Kiln Data Analysis Results (multiple Microsoft Excel® spreadsheets)
CAA C	Semiannual Reports 2012 – 2014 (multiple files)
CAA D	Startup, Shutdown, and Malfunction Plan (23 pages)
CAA E	MACT Standard Operating Procedures (106 pages)
CAA F	Excessive Exceedance Reports 2012 – 2014 (multiple files)
CAA G*	NEIC Excessive Exceedance Evaluation (Microsoft Excel® spreadsheet)

Resource Conservation and Recovery Act Appendices

RCRA A*	Photographs (10 pages)
RCRA B	373 Permit (652 pages)
RCRA C	Calibration Portions of 2012 to 2014 Fugitive VOC Emission Survey Screening Quarterly Reports (48 pages)
RCRA D	2014 4th Quarterly Fugitive VOC Emission Survey Screening Report (237 pages)
RCRA E	2012 Subpart CC Monitoring Records (49 pages)
RCRA F	2013 Subpart CC Monitoring Records (49 pages)
RCRA G	2014 Subpart CC Monitoring Records (21 pages)
RCRA H*	2012 to 2014 Kiln Pressure Exceedances (4 pages)
RCRA I*	2012 to 2014 Baghouse Pressure Drop Below Limit (3 pages)
RCRA J*	2012 to 2014 Kiln BTU per Hour Exceedances (4 pages)
RCRA K	2014 Annual Hazardous Waste Report (119 pages)
RCRA L	Laboratory Waste Solids Analytical 2008 (12 pages)
RCRA M	Laboratory Waste Solids Analytical 2010 (5 pages)
RCRA N*	NEIC May 27, 2015, Email (1 page)
RCRA O	40 CFR Part 268 Appendix XI (3 pages)
RCRA P*	2012 to 2014 Kiln LGF Feed Exceedances (372 pages)

**This Contents page presents all sections contained in this report
and provides a clear indication of the end of this report**

INTRODUCTION

At the request of U.S. Environmental Protection Agency (EPA) Region 2, EPA's National Enforcement Investigations Center (NEIC) conducted a multimedia investigation of the Norlite, LLC (Norlite) facility, located at 628 South Saratoga Street in Cohoes, New York. NEIC conducted the on-site inspection from March 17 through 19, 2015, and focused on evaluating Norlite's compliance with applicable Clean Air Act (CAA) and Resource Conservation and Recovery Act (RCRA) regulations. Norlite's operations are also subject to environmental permits and regulations administered by the EPA and the New York State Department of Environmental Conservation (NYSDEC).

Norlite, a subsidiary of Tradebe, is located on the southern boundary of the City of Cohoes, New York. The facility consists of production operations and a quarry for shale. It began operation as a mining facility in 1955. The current facility occupies about 12 acres for processing and 130 acres of mining land, currently with 150 years of reserve. The Norlite facility produces an expanded shale aggregate in two dry continuous process rotary kilns. Raw materials are quarried on-site and transported to the kilns via a conveyor system. The production operation is a mineral beneficiation process producing lightweight building materials such as concrete blocks and construction products for highway surfacing and structural concrete. Both kilns have identical emission control systems. The systems include both wet and dry emission control devices for the collection and removal of particulate matter, hydrogen chloride (HCl), metals, and other gaseous species. Norlite uses a mix of energy sources, including industrial organic wastes (hazardous waste), waste oil, fuel oil, and natural gas for its two kilns. Approximately 2.5 million British thermal units (BTUs) are required to produce 1 ton of lightweight aggregate. Norlite has approximately 60 on-site employees and operates 24 hours a day, 7 days a week, 365 days a year. Routine maintenance is performed every 3 months, causing operations to shut down for 2 to 3 days.

ON-SITE INSPECTION SUMMARY

NEIC conducted the on-site inspection of Norlite from March 17 through 19, 2015. The NEIC inspection team consisted of Lorna Goodnight (project manager), Matthew Schneider, and Jackie Vega. John Wilk, Mozafar Ghaffari, Hans Buening, and Charles Zafonte, from EPA Region 2, and Joseph Hadersbeck and Gary McPherson, from NYSDEC, also participated in portions of the inspection. Credentials were presented to Tita LaGrimas (Tradebe's Executive Vice President of Regulatory Affairs) during an opening meeting on March 17, 2015. A closing meeting was held on March 19, 2015, to discuss some of the preliminary inspection observations. The NEIC inspection team stated that final determinations will be made in conjunction with EPA Region 2. A "Summary of Findings and Observations" table is included in this report. EPA Region 2 will assess the applicability of regulatory requirements based on its review of this report and other technical, regulatory, and facility information. Additionally, NEIC prepared a document containing photographs (**Appendix RCRA A**) which may also be referred to in the evidence tables as a supporting document.

CLEAN AIR ACT

Norlite is currently operating under an expired Title V permit (permit No. 4-0103-00016/00048; effective date: June 6, 2002; expiration date: June 6, 2007). The facility uses organic hazardous waste as fuel in two lightweight aggregate kilns and is subject to the regulatory requirements in 40 Code of Federal Regulations (CFR) Part 63 Subpart EEE – *National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors* (Hazardous Waste Combustor MACT).

During the CAA portion of the on-site inspection, the NEIC inspection team performed the following activities:

- Interviewed plant personnel about facility operations
- Observed the operation of the rotary kilns and associated air pollution control devices
- Reviewed documents, records, and periodic reports
- Collected continuous monitoring data used to show compliance with the regulatory requirements
- Assisted the RCRA team by conducting leak detection monitoring

RESOURCE CONSERVATION AND RECOVERY ACT

Norlite is permitted for the storage and incineration of hazardous waste and is considered a large quantity generator and a treatment, storage, and disposal facility (TSDF) with the RCRA identification number of NYD080469935. Norlite was issued a hazardous waste permit by NYSDEC in July 2007 pursuant to the state's hazardous waste management regulations, 6 New York Code, Rules and Regulations (NYCRR) Part 373 (the "373 Permit"), NYSDEC permit No.

4-0103-00016/00016 (**Appendix RCRA B**). The 373 Permit expired on July 12, 2012. Norlite has continued operation at the facility under the expired permit. Norlite submitted a permit renewal application in January 2012.

During the RCRA portion of the on-site inspection, the NEIC inspection team performed the following activities:

- Interviewed plant personnel about facility operations, including 40 CFR Parts 264/265 Subparts BB and CC monitoring
- Reviewed documents and records
- Identified regulated process-generated wastes
- Observed and inspected process operations, including waste storage and treatment units

PROCESS

Norlite operates two rotary kilns to produce an expanded shale aggregate. Norlite has used hazardous waste as fuel for the kilns since the early 1980s. There are approximately 60 employees at this location. The shale is quarried on-site, transported to the kilns via a conveyor system, separated according to size, and then stored in a silo. The shale is fed into the back end of a kiln, and the fuels are fed into the opposite end. Hazardous waste that is to be used as fuel is delivered to Norlite in tanker trucks, drums, and totes. The hazardous waste fuel is a liquid waste that is mainly waste solvents and consists of mixtures of organic liquids such as paint thinners, acetone, etc. The supplemental fuels used in the kilns are natural gas, fuel oils, or used oil, which are used during startup and when the automatic waste feed cut-off is activated. Kiln operations are summarized in **Figure 1**.

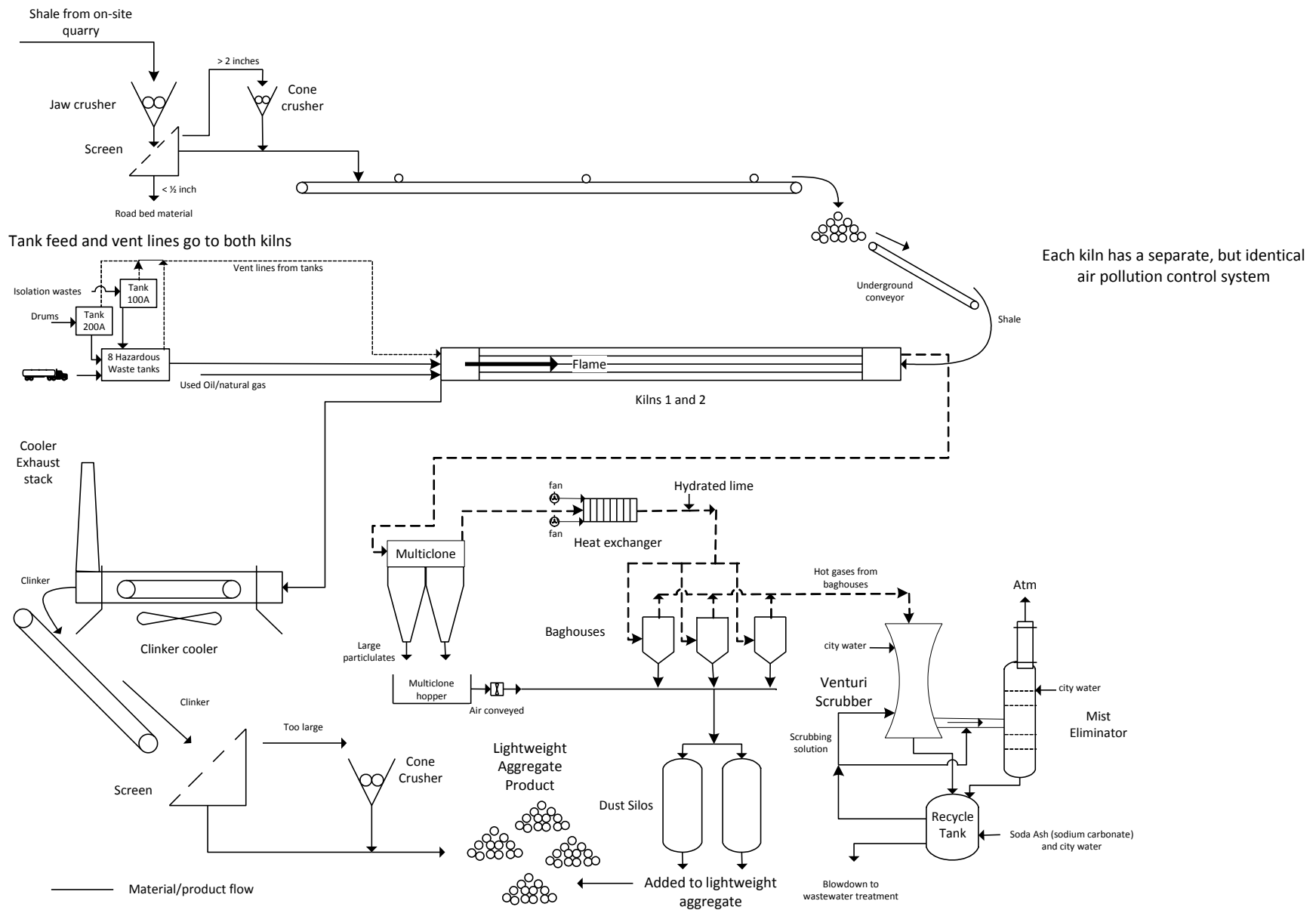


Figure 1. Kiln, finish mill, and product operations
Norlite, LLC
Cohoes, New York

The expanded shale aggregate is manufactured in two dry process rotary kilns. Kiln 1, manufactured by Traylor, is 175 feet long. Kiln 2, manufactured by Allis-Chalmers, is 180 feet long. Both kilns have an outside diameter of 11 feet and have a steel shell lined with 6-inch refractory brick, for an effective inside diameter of 10 feet. The burn zone extends approximately 30 feet from the burner end of the kiln. The burning zone gas temperature is 2,200 to 3,000 degrees Fahrenheit (°F). The rated capacity of each kiln is approximately 25 tons per hour (tph) clinker.

The liquid waste fuel (hazardous waste fuel, also referred to as LLGF and LGF) is stored in nitrogen-blanketed storage tanks and is delivered to the kiln through a pumping station to maintain an approximate maximum feed rate of 10.3 gallons per minute (gpm) to each burner. The burner consists of a stainless steel outer pipe that supplies the atomization air to inject the material directly into the combustion zone.

The raw feed material is shale, which is proportioned and stored in a covered silo and then fed directly to the kiln. The shale is introduced at the back end of the kiln (countercurrent to the waste fuels that are fed from the opposite end).

Two process vent streams are sent to the kiln for incineration. The first stream is the vent from the nitrogen-blanketed liquid waste fuel storage tanks. During the filling cycles of the storage tanks, any excess gaseous vapors are vented through a closed-loop system to the burner end of the kiln. The second stream consists of vented material from the drum handling operations. Drums are emptied into tank 200A via a vacuum system. The vacuum system vents to the kiln and also includes general drum area vapors under negative ventilation. This vent stream is mixed with ambient air and is used as primary combustion air for the burner.

Natural gas, fuel oils, or used oil are used to preheat the kiln during start-up and may also be used as supplemental fuel while firing liquid waste feed. Natural gas or fuel oil may also be used as a pilot fuel when firing liquid waste fuel. Fuel oil or used oil may also be blended with liquid waste fuel when firing to increase heat content of the waste feed and improve combustion characteristics.

There are ten permitted hazardous waste tanks; eight are used to blend the fuel and feed the kilns. One (tank 200A) operates under vacuum and is used to pump out drums and totes, and one (tank 100A) is used for any liquid wastes that need to be kept separate for special handling.

Both kilns have identical emission control systems that include both wet and dry emission control devices for the collection and removal of particulate matter, HCl, metals, and other gaseous emission products. The overall air pollution control system also includes forced draft fans, an induced draft fan, and exhaust stack. Neither kiln is equipped with any type of emergency safety vent.

To remove large particulate matter, kiln emissions first pass through a mechanical collector, a Barrons multiple cyclone unit (multiclone) that incorporates relatively small-diameter cyclones operating in parallel with a common inlet and outlet. Dust collected in the multiclone accumulates in a hopper. The dust is air-conveyed and collected with the baghouse fines, which are added to the lightweight aggregate, becoming part of the product.

The kiln flue gas then passes through an air-to-air heat exchanger that was redesigned in late 1999 and now uses two forced draft fans that provide ambient air as the cooling medium. Gases enter the heat exchanger at approximately 900 to 1,000 °F and exit at 400 to 460 °F. The first fan supplies air to the bottom exchanger shell, and a second fan supplies ambient air directly to the top exchanger shell. A damper provides cooling air to control temperature if the inlet temperature to the baghouse is higher than desired. The damper is under negative pressure since it is upstream of the induced draft fan.

Following the heat exchanger is an Aeropulse, Inc. Power Pulse Collector (baghouse) with three modules. The filter media is continuously pulsed one row at a time, controlled by a timer. A modulating air damper automatically adjusts inlet gas temperatures, if needed, to less than 400 °F by bleeding in ambient air directly into the flue gas before it enters the baghouse. Hydrated lime is injected immediately prior to the baghouse to control sulfur dioxide (SO₂) and sulfuric acid mist generated from the combustion of liquid waste in the kiln, and to protect the baghouse from corrosion. The lime also neutralizes HCl, providing approximately 80 percent of the removal prior to the wet scrubber. The baghouse is designed to control 60 percent of the sulfur dioxide and sulfur trioxide introduced from the kiln. Fines collected in each cell of the baghouse are discharged using a rotary airlock. The fines are conveyed and combined with the multiclone fines into one of two storage silos. Fines from both silos are added to the lightweight aggregate, becoming part of the product. The baghouse is also equipped with a bag leak detection system.

The induced draft (ID) fan carries exhaust gases to a venturi wet scrubber for acid gas removal. The scrubber is a rod design that has tubular stainless steel rods and baffles installed in rows against the throat. The scrubber is designed for 99 percent HCl and 68 percent SO₂ removal efficiencies. Clean water headers are located directly above the venturi scrubber to provide cooling to the exhaust system. Caustic sodium carbonate (soda ash) is recycled through the unit. Scrubbing solution is also injected into the transition segment located between the venturi scrubber and mist eliminator units. Excess water drains from the venturi exit elbow to the settling/recycle tank. Sodium carbonate and water solution are used to automatically adjust the pH of the excess water to 7.9 or greater. Blowdown is removed from the blowdown pump discharge to maintain a constant solids concentration in the solution; the removed blowdown is discharged to Norlite's wastewater treatment plant (WWTP). Following the venturi scrubber is a mist eliminator that captures the entrained droplets of caustic solution. The mist eliminator includes two plastic mesh pads, which capture solids. Water is sprayed onto the pads to remove the solids and flush the solids to the bottom of the unit. The mist eliminator drains to the recycle tank.

The baghouse is followed by a 400 horsepower fan that induces draft through the kiln, multiclone, heat exchanger, and baghouse, and provides forced draft on the exhaust gases through the venturi scrubber and mist elimination units. Secondary combustion air is preheated by the clinker cooler at the front end of the kiln.

Oxygen and carbon monoxide are monitored continuously at the outlet from the baghouse. In addition, the stack of each kiln is equipped with flue gas flow monitors.

Waste streams must be approved before they can be accepted as a fuel at Norlite. The generator must complete a waste profile form, and acceptance is determined by Prince Knight and Jana Benedict, Norlite laboratory manager and administrative compliance officer, respectively. Customer service and data entry operations are conducted out of Norlite's corporate office in Connecticut. Analytical data for the waste streams is entered into a database, SAP, which is used to calculate metal feed rates. Generators sometimes submit samples of the waste stream before approval, but it is not required. Data provided by the generator may be entered instead.

Norlite collects a sample from each waste load entering the plant. For container loads, each container is opened and visually inspected and a composite sample is collected for each line item of a manifest. These fingerprint analyses are compared to the acceptance analyses for the waste stream to determine acceptance.

Norlite conducts analyses on the incoming wastes for metals (antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and thallium), chlorine, sulfur, ash, and solids. Results of these analyses are entered into SAP, which is used to determine feed rates of constituents.

Using the incoming load analysis, kiln operators are able to determine whether loads being blended into a feed tank will meet the feed rate limits. The operators use this data to determine the optimal blends to make in the kiln feed tanks. Norlite uses a mathematical program to certify tanks prior to burning in the kilns.

Norlite's on-site wastewater treatment plant receives wastewaters from the scrubbers associated with the kilns, which contain metals, HCl, and SO₂. The WWTP also receives stormwater that has contacted process areas of the facility. Wastewaters, including the scrubber blowdown, enter an equalization tank. Ferric chloride is added, and then the wastewater is piped to a flocculation tank, where sodium hydroxide and flocculation agents are added to drop out the metal particulates. The wastewater overflows to a clarifier tank; the solids settle to the bottom and are piped to a sludge tank. The sludge is passed through a filter press, and the resulting filter cake is added to the clinker product. Approximately 10 cubic feet of filter cake is generated a day.

Hydrochloric acid is added to the clarifier overflow, and then the water is piped through a series of filters, including sock filtration, a sand filter, and two large activated carbon filters. There

are two sampling points for compliance with the Clean Water Act permit. Outfall 06A is sampled for metals, then the non-contact cooling water is added; outfall 06 is sampled for the remaining parameters. Two effluent tanks located after the filters hold wastewater prior to its discharge to the Mohawk River. Outfall 06 is located at the outlet of the effluent tanks.

Sock filters, sand filters, and carbon filters are considered spent and replaced based on pressure drops in the WWTP. The sand filter is replaced approximately every 6 months; the carbon filter is replaced approximately every 2 years; and the sock filters are replaced approximately every 2 months. The filters are handled as non-hazardous solid wastes.

SUMMARY OF FINDINGS

Table 1 summarizes findings for the CAA and RCRA investigation, identified by the NEIC inspection team during the investigation. These findings are linked to specific supporting documents that can be found in individual appendices to this table. These findings can be categorized as either areas of noncompliance or concern. Areas of concern are inspection observations of problems or activities that could impact the environment, result in future or current noncompliance, or areas associated with pollution prevention.

Table 1. SUMMARY OF FINDINGS
Norlite, LLC
Cohoes, New York

#	Regulatory Citation	Findings/Supporting Notes	Evidence
CLEAN AIR ACT (CAA) Matthew Schneider (303) 462-9292			
	AREA OF NONCOMPLIANCE		
1	<p>40 CFR § 63.1221 – <i>What are the replacement standards for hazardous waste burning lightweight aggregate kilns?</i></p> <p>(a) <i>Emission and hazardous waste feed limits for existing sources. You must not discharge or cause combustion gases to be emitted into the atmosphere or feed hazardous waste that contain:</i></p> <p>(1) <i>For dioxins and furans, either:</i></p> <p>(i) <i>Emissions in excess of 0.20 ng TEQ/dscm corrected to 7 percent oxygen; or</i></p> <p>(ii) <i>Rapid quench of the combustion gas temperature at the exit of the (last) combustion chamber (or exit of any waste heat recovery system that immediately follows the last combustion chamber) to 400 °F or lower based on the average of the test run average temperatures. You must also notify in</i></p>	<p>Norlite failed to meet the emission standard for dioxins and furans by exceeding the established operating parameter limits (OPLs) while hazardous waste was in the combustion chamber of the kilns.</p> <p>Norlite conducted a comprehensive performance test (CPT) and established OPLs that were incorporated into the Notification of Compliance (NOC). The OPLs are limits that should never be exceeded while hazardous waste is in the combustion chamber of the kiln. Exceedances of the OPLs are not considered violations of the standard during periods of startup, shutdown, or malfunction (SSM), provided that Norlite follows the SSM plan during startups and shutdowns (See Area of Concerns A and C).</p> <p>Alarm set points are established at levels below the OPLs and are intended to trigger the automatic waste feed cutoff (AWFCO), for the purpose of preventing the OPLs from being exceeded.</p> <p>Norlite provided continuous monitoring data from both Kiln 1 and Kiln 2 for 2012 through 2014. NEIC compared the monitored parameter values against the OPLs to determine if Norlite operated the kilns outside the permitted ranges established during the CPT. In general, compliance with the OPLs are determined by the hourly rolling average (HRA) parameter value, calculated every minute.</p> <p>NEIC only included as exceedances the instances when the minute rolling average (MRA) hazardous waste feed was greater than 1 gallon per minute (gpm) during the same minute that the HRA parameter exceedance occurred. This</p>	<p>Appendix CAA A – Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>

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	<p>writing the RCRA authority that you are complying with this option;</p> <p>40 CFR § 63.1209 – <i>What are the monitoring requirements?</i></p> <p>(k) Dioxins and furans. <i>You must comply with the dioxin and furans emission standard by establishing and complying with the following operating parameter limits. You must base the limits on operations during the comprehensive performance test, unless the limits are based on manufacturer specifications.</i></p> <p>(1) Gas temperature at the inlet to a dry particulate matter control device.</p> <p>(ii) For hazardous waste burning lightweight aggregate kilns, you must establish a limit on the maximum temperature of the gas at the exit of the (last) combustion chamber (or exit of any waste heat recovery system) on an hourly rolling average. The limit must be established as the average of the test run averages;</p> <p>(2) Minimum combustion chamber temperature. <i>(i) For sources other than cement kilns, you must measure the temperature of each combustion chamber at a location that best represents, as practicable, the bulk gas temperature in the combustion zone. You must document the temperature measurement location in the test plan you submit under §§63.1207(e) and (f);</i></p>	<p>method of analysis ensures that only exceedances that occurred when hazardous waste was in the combustion chamber of the kilns were counted as exceedances.</p> <p>Additionally, NEIC excluded exceedances that occurred during time periods reported (in the semiannual reports) as startup or shutdown of the kiln, as well as malfunctions for the specific parameter being analyzed.</p> <p>Total Number of HRAs the Specified Operating Parameter Limits Were Exceeded by Semiannual Period</p> <p>HRA Maximum Heat Exchanger Exit Temperature: 436.5 °F</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>11,990</td><td>8,014</td></tr><tr><td>July-Dec 2012</td><td>58</td><td>391</td></tr><tr><td>Jan-June 2013</td><td>5,570</td><td>1,101</td></tr><tr><td>July-Dec 2013</td><td>1,119</td><td>1,410</td></tr><tr><td>Jan-June 2014</td><td>7,246</td><td>818</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>1,117</td></tr></table> <p>HRA Minimum Kiln Backend Temperature: 894.5 °F</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>69</td><td>1</td></tr><tr><td>July-Dec 2012</td><td>2</td><td>1</td></tr><tr><td>Jan-June 2013</td><td>4</td><td>5</td></tr><tr><td>July-Dec 2013</td><td>2</td><td>2</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>2</td><td>1</td></tr></table> <p>HRA Maximum Flue Gas Flowrate: 45,625.5 wet standard cubic feet per minute (scfm)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>4,097</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>1,892</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	11,990	8,014	July-Dec 2012	58	391	Jan-June 2013	5,570	1,101	July-Dec 2013	1,119	1,410	Jan-June 2014	7,246	818	July-Dec 2014	0	1,117	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	69	1	July-Dec 2012	2	1	Jan-June 2013	4	5	July-Dec 2013	2	2	Jan-June 2014	0	0	July-Dec 2014	2	1	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	4,097	Jan-June 2013	0	1,892	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	
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Table 1. SUMMARY OF FINDINGS
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	<p><i>(ii) You must establish a minimum hourly rolling average limit as the average of the test run averages.</i></p> <p><i>(3) Maximum flue gas flowrate or production rate. (i) As an indicator of gas residence time in the control device, you must establish and comply with a limit on the maximum flue gas flowrate, the maximum production rate, or another parameter that you document in the site-specific test plan as an appropriate surrogate for gas residence time, as the average of the maximum hourly rolling averages for each run.</i></p> <p><i>(ii) You must comply with this limit on a hourly rolling average basis;</i></p> <p>40 CFR § 63.1206 – When and how must you comply with the standards and operating requirements?</p> <p><i>(b) Compliance with standards—(1) Applicability. The emission standards and operating requirements set forth in this subpart apply at all times except:</i></p> <p><i>(i) During periods of startup, shutdown, and malfunction; and</i></p> <p><i>(ii) When hazardous waste is not in the combustion chamber...</i></p> <p><i>(2) Methods for determining compliance. The Administrator will determine compliance with the emission</i></p>		

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	<p><i>standards of this subpart as provided by §63.6(f)(2).</i></p> <p>40 CFR § 63.6(f)(2)(ii) – <i>The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator’s conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in 63.6(e) and applicable subparts of this part.</i></p>																							
2	<p>40 CFR § 63.1221 – <i>What are the replacement standards for hazardous waste burning lightweight aggregate kilns?</i></p> <p>(a) <i>Emission and hazardous waste feed limits for existing sources. You must not discharge or cause combustion gases to be emitted into the atmosphere or feed hazardous waste that contain:</i></p> <p>(5) <i>Carbon monoxide and hydrocarbons.</i> <i>(i) Carbon monoxide in excess of 100 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis and corrected to 7 percent oxygen...</i></p>	<p>Norlite failed to meet the emission standard by exceeding the carbon monoxide limit of 100 parts per million (ppm) while hazardous waste was in the combustion chamber of the kilns.</p> <p>As described in AON 1, NEIC evaluated the continuous monitoring data provided by Norlite. The following number of HRAs were observed in which carbon monoxide emissions exceeded 100 ppm during periods when the hazardous waste feed rate was greater than 1 gpm for the corresponding minute that the HRA parameter value was analyzed.</p> <p>Additionally, NEIC excluded exceedances that occurred during time periods reported (in the semiannual reports) as startup or shutdown of the kiln, as well as malfunctions for the specific parameter being analyzed.</p> <p>Total Number of HRAs the Specified Operating Parameter Limits Were Exceeded by Semiannual Period</p> <p>HRA Maximum CO concentration: 100.5 parts per million by volume (ppmv)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>71</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>2</td><td>1</td></tr><tr><td>Jan-June 2013</td><td>1</td><td>2</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>2</td></tr><tr><td>Jan-June 2014</td><td>1</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>1</td><td>1</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	71	0	July-Dec 2012	2	1	Jan-June 2013	1	2	July-Dec 2013	0	2	Jan-June 2014	1	0	July-Dec 2014	1	1	<p>Appendix CAA A – Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>
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July-Dec 2012	2	1																						
Jan-June 2013	1	2																						
July-Dec 2013	0	2																						
Jan-June 2014	1	0																						
July-Dec 2014	1	1																						
3	<p>40 CFR § 63.1221 – <i>What are the replacement standards for hazardous</i></p>	<p>Norlite failed to achieve the required destruction efficiency at all times when hazardous waste was in the combustion chamber of the kilns. Norlite also</p>	<p>Appendix CAA A –</p>																					

Table 1. SUMMARY OF FINDINGS
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	<p>waste burning lightweight aggregate kilns?</p> <p>(c) Destruction and removal efficiency (DRE) standard—(1) 99.99% DRE. Except as provided in paragraph (c)(2) of this section, you must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated under paragraph (c)(3) of this section...</p> <p>40 CFR § 63.1209 – What are the monitoring requirements?</p> <p>(j) DRE. To remain in compliance with the destruction and removal efficiency (DRE) standard, you must establish operating limits during the comprehensive performance test (or during a previous DRE test under provisions of §63.1206(b)(7)) for the following parameters, unless the limits are based on manufacturer specifications, and comply with those limits at all times that hazardous waste remains in the combustion chamber (i.e., the hazardous waste residence time has not transpired since the hazardous waste feed cutoff system was activated):</p> <p>(1) Minimum combustion chamber temperature. (i) You must measure the temperature of each combustion chamber at a location that best represents, as practicable, the bulk gas temperature in the combustion zone. You must document the temperature</p>	<p>failed to operate the hazardous waste firing system according to manufacturer’s recommendation and operating experience.</p> <p>The parameters that are required to be monitored for DRE (minimum combustion chamber temperature and maximum flue gas flow rate) are also parameters monitored to show adequate destruction of dioxins and furans as seen in AON 1. Only HRAs for which the corresponding minute showed hazardous waste flow rates above 1 gpm were analyzed to ensure that hazardous waste was in the combustion chamber when the OPL was exceeded.</p> <p>Additionally, NEIC excluded exceedances that occurred during time periods reported (in the semiannual reports) as startup or shutdown of the kiln, as well as malfunctions for the specific parameter being analyzed.</p> <p>According to the CPT and NOC, to satisfy the requirement for operation of the waste firing system, Norlite has established a minimum hazardous waste atomization pressure based on manufacturer’s recommendation and operating experience.</p> <p>Total Number of HRAs the Specified Operating Parameter Limits Were Exceeded by Semiannual Period</p> <p>HRA Minimum Kiln Backend Temperature: 894.5 °F</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>69</td><td>1</td></tr><tr><td>July-Dec 2012</td><td>2</td><td>1</td></tr><tr><td>Jan-June 2013</td><td>4</td><td>5</td></tr><tr><td>July-Dec 2013</td><td>2</td><td>2</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>2</td><td>1</td></tr></table> <p>HRA Maximum Flue Gas Flowrate: 45,625.5 wet standard cubic feet per minute (scfm)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>4,097</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>1,892</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	69	1	July-Dec 2012	2	1	Jan-June 2013	4	5	July-Dec 2013	2	2	Jan-June 2014	0	0	July-Dec 2014	2	1	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	4,097	Jan-June 2013	0	1,892	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	<p>Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>
Semiannual Period	Kiln 1	Kiln 2																																											
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	<p><i>measurement location in the test plan you submit under §63.1207(e);</i></p> <p>(ii) <i>You must establish a minimum hourly rolling average limit as the average of the test run averages;</i></p> <p>(2) – <i>Maximum flue gas flowrate or production rate. (i) As an indicator of gas residence time in the control device, you must establish and comply with a limit on the maximum flue gas flowrate, the maximum production rate, or another parameter that you document in the site-specific test plan as an appropriate surrogate for gas residence time, as the average of the maximum hourly rolling averages for each run.</i></p> <p>(ii) <i>You must comply with this limit on a hourly rolling average basis;</i></p> <p>(4) – <i>Operation of waste firing system. You must specify operating parameters and limits to ensure that good operation of each hazardous waste firing system is maintained.</i></p>	<p>HRA minimum LLGF atomization pressure: 35.85 pounds per square inch gauge (psig)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>1</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	0	Jan-June 2013	0	0	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	1	0	
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4	<p>40 CFR § 63.1209(m) – <i>Particulate matter. You must comply with the particulate matter emission standard by establishing and complying with the following operating parameter limits. You must base the limits on operations during the comprehensive performance test, unless the limits are based on manufacturer specifications.</i></p> <p>(1) <i>Control device operating parameter limits (OPLs)—(i) Wet scrubbers. For</i></p>	<p>Norlite failed to meet the emission standard for particulate matter at all times that hazardous waste was in the combustion chamber of the kilns.</p> <p>As described in AON 1, NEIC evaluated the continuous monitoring data provided by Norlite and compared the data to the required OPLs. The following number of HRAs for each parameter were observed to be outside the established OPLs related to particulate matter. Only HRAs for which the corresponding minute showed hazardous waste flow rates above 1 gpm were analyzed.</p> <p>Additionally, NEIC excluded exceedances that occurred during time periods reported (in the semiannual reports) as startup or shutdown of the kiln, as well as malfunctions for the specific parameter being analyzed.</p>	<p>Appendix CAA A – Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p>																					

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	<p><i>sources equipped with wet scrubbers, including ionizing wet scrubbers, high energy wet scrubbers such as venturi, hydrosonic, collision, or free jet wet scrubbers, and low energy wet scrubbers such as spray towers, packed beds, or tray towers, you must establish limits on the following parameters:</i></p> <p>(A) <i>For high energy scrubbers only, minimum pressure drop across the wet scrubber on an hourly rolling average, established as the average of the test run averages;</i></p> <p>(B) <i>For all wet scrubbers:</i></p> <p>(1) <i>To ensure that the solids content of the scrubber liquid does not exceed levels during the performance test, you must either:</i></p> <p>(i) <i>Establish a limit on solids content of the scrubber liquid using a CMS or by manual sampling and analysis. If you elect to monitor solids content manually, you must sample and analyze the scrubber liquid hourly unless you support an alternative monitoring frequency in the performance test plan that you submit for review and approval; or</i></p> <p>(ii) <i>Establish a minimum blowdown rate using a CMS and either a minimum scrubber tank volume or liquid level using a CMS.</i></p>	<p>Total Number of HRAs the Specified Operating Parameter Limits Were Exceeded by Semiannual Period</p> <p>HRA venturi minimum pressure drop: 6.05 inches water column (w.c.)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>64,498</td><td>203,713</td></tr><tr><td>July-Dec 2012</td><td>85,667</td><td>173,834</td></tr><tr><td>Jan-June 2013</td><td>123,149</td><td>130,147</td></tr><tr><td>July-Dec 2013</td><td>172,688</td><td>195,561</td></tr><tr><td>Jan-June 2014</td><td>55,109</td><td>172,855</td></tr><tr><td>July-Dec 2014</td><td>61,007</td><td>151,071</td></tr></table> <p>HRA minimum scrubber tank level: 57.5% tank height</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>204,477</td><td>197,236</td></tr><tr><td>July-Dec 2012</td><td>168,773</td><td>193,245</td></tr><tr><td>Jan-June 2013</td><td>126,052</td><td>146,634</td></tr><tr><td>July-Dec 2013</td><td>183,764</td><td>119,231</td></tr><tr><td>Jan-June 2014</td><td>139,732</td><td>118,066</td></tr><tr><td>July-Dec 2014</td><td>144,971</td><td>85,851</td></tr></table> <p>HRA minimum scrubber liquid to gas ratio: 4.85 gallons per 10³ cubic feet (gal/10³ft³)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>129</td><td>218</td></tr><tr><td>July-Dec 2012</td><td>1,168</td><td>2,585</td></tr><tr><td>Jan-June 2013</td><td>1,180</td><td>1,145</td></tr><tr><td>July-Dec 2013</td><td>2,092</td><td>450</td></tr><tr><td>Jan-June 2014</td><td>2,236</td><td>470</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>1,230</td></tr></table> <p>HRA minimum scrubber recirculation rate: 174.65 gpm</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	64,498	203,713	July-Dec 2012	85,667	173,834	Jan-June 2013	123,149	130,147	July-Dec 2013	172,688	195,561	Jan-June 2014	55,109	172,855	July-Dec 2014	61,007	151,071	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	204,477	197,236	July-Dec 2012	168,773	193,245	Jan-June 2013	126,052	146,634	July-Dec 2013	183,764	119,231	Jan-June 2014	139,732	118,066	July-Dec 2014	144,971	85,851	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	129	218	July-Dec 2012	1,168	2,585	Jan-June 2013	1,180	1,145	July-Dec 2013	2,092	450	Jan-June 2014	2,236	470	July-Dec 2014	0	1,230	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	0	Jan-June 2013	0	0	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	<p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>
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	<p>(4) For minimum blowdown rate and either a minimum scrubber tank volume or liquid level using a CMS, you must establish a limit on an hourly rolling average as the average of the test run averages.</p> <p>(C) For high energy wet scrubbers only, you must establish limits on either the minimum liquid to gas ratio or the minimum scrubber water flowrate and maximum flue gas flowrate on an hourly rolling average. If you establish limits on maximum flue gas flowrate under this paragraph, you need not establish a limit on maximum flue gas flowrate under paragraph (m)(2) of this section. You must establish these hourly rolling average limits as the average of the test run averages...</p>	<p>HRA Maximum Flue Gas Flowrate: 45,625.5 wet standard cubic feet per minute (scfm)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>4,097</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>1,892</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	4,097	Jan-June 2013	0	1,892	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	
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5	<p>40 CFR § 63.1209(o) – Hydrogen chloride and chlorine gas. You must comply with the hydrogen chloride and chlorine gas emission standard by establishing and complying with the following operating parameter limits. You must base the limits on operations during the comprehensive performance test, unless the limits are based on manufacturer specifications.</p> <p>(2) Maximum flue gas flowrate or production rate. (i) As an indicator of gas residence time in the control device, you must establish a limit on the maximum flue gas flowrate, the maximum production rate, or another parameter that you document in the site-specific test plan as an appropriate surrogate for gas residence time, as the</p>	<p>Norlite failed to meet the hydrogen chloride and chlorine gas emission standard at all times hazardous waste was in the combustion chamber of the kilns.</p> <p>As described in AON 1, NEIC evaluated the continuous monitoring data provided by Norlite and compared the data to the required OPLs. Some of the required OPLs for hydrogen chloride and chlorine gas are the same parameters required to be monitored for other emission standards. The following number of HRAs for each parameter were observed to be outside the established OPLs. Only HRAs for which the corresponding minute showed hazardous waste flow rates above 1 gpm were analyzed.</p> <p>Additionally, NEIC excluded exceedances that were during time periods reported (in the semiannual reports) as startup or shutdown of the kiln as well as malfunctions for the specific parameter being analyzed.</p> <p>Total Number of HRAs the Specified Operating Parameter Limits Were Exceeded by Semiannual Period</p>	<p>Appendix CAA A – Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>																					

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	<p><i>average of the maximum hourly rolling averages for each run.</i></p> <p>(ii) <i>You must comply with this limit on a hourly rolling average basis;</i></p> <p>(3) <i>Wet scrubber. If your combustor is equipped with a wet scrubber:</i></p> <p>(i) <i>If your source is equipped with a high energy wet scrubber such as a venturi, hydrosonic, collision, or free jet wet scrubber, you must establish a limit on minimum pressure drop across the wet scrubber on an hourly rolling average as the average of the test run averages;</i></p> <p>(iv) <i>You must establish a limit on minimum pH on an hourly rolling average as the average of the test run averages;</i></p> <p>(v) <i>You must establish limits on either the minimum liquid to gas ratio or the minimum scrubber water flowrate and maximum flue gas flowrate on an hourly rolling average as the average of the test run averages. If you establish limits on maximum flue gas flowrate under this paragraph, you need not establish a limit on maximum flue gas flowrate under paragraph (o)(2) of this section; and</i></p> <p>(4) <i>Dry scrubber. If your combustor is equipped with a dry scrubber, you must establish the following operating parameter limits:</i></p>	<p>HRA Maximum Flue Gas Flowrate: 45,625.5 wet standard cubic feet per minute (scfm)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>4,097</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>1,892</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table> <p>HRA venturi minimum pressure drop: 6.05 inches water column (w.c.)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>64,498</td><td>203,713</td></tr><tr><td>July-Dec 2012</td><td>85,667</td><td>173,834</td></tr><tr><td>Jan-June 2013</td><td>123,149</td><td>130,147</td></tr><tr><td>July-Dec 2013</td><td>172,688</td><td>195,561</td></tr><tr><td>Jan-June 2014</td><td>55,109</td><td>172,855</td></tr><tr><td>July-Dec 2014</td><td>61,007</td><td>151,071</td></tr></table> <p>HRA minimum scrubber pH: 8.05 pH units</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2013</td><td>1</td><td>0</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>1</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>2</td><td>0</td></tr></table> <p>HRA minimum scrubber liquid to gas ratio: 4.85 gallons per 10³ cubic feet (gal/10³ft³)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>129</td><td>218</td></tr><tr><td>July-Dec 2012</td><td>1,168</td><td>2,585</td></tr><tr><td>Jan-June 2013</td><td>1,180</td><td>1,145</td></tr><tr><td>July-Dec 2013</td><td>2,092</td><td>450</td></tr><tr><td>Jan-June 2014</td><td>2,236</td><td>470</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>1,230</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	4,097	Jan-June 2013	0	1,892	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	64,498	203,713	July-Dec 2012	85,667	173,834	Jan-June 2013	123,149	130,147	July-Dec 2013	172,688	195,561	Jan-June 2014	55,109	172,855	July-Dec 2014	61,007	151,071	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	0	Jan-June 2013	1	0	July-Dec 2013	0	0	Jan-June 2014	1	0	July-Dec 2014	2	0	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	129	218	July-Dec 2012	1,168	2,585	Jan-June 2013	1,180	1,145	July-Dec 2013	2,092	450	Jan-June 2014	2,236	470	July-Dec 2014	0	1,230	
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	<p>(i) <i>Minimum sorbent feedrate. You must establish a limit on minimum sorbent feedrate on an hourly rolling average as the average of the test run averages.</i></p> <p>(ii) <i>Minimum carrier fluid flowrate or nozzle pressure drop. You must establish a limit on minimum carrier fluid (gas or liquid) flowrate or nozzle pressure drop based on manufacturer's specifications.</i></p>	<p>HRA minimum dry sorbent (lime) feed rate: 249.5 pounds per hour (lb/hr)</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>1</td><td>0</td></tr></table> <p>HRA Minimum dry sorbent carrier fluid flow rate:151.75 cfm</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2013</td><td>1</td><td>0</td></tr><tr><td>July-Dec 2013</td><td>0</td><td>0</td></tr><tr><td>Jan-June 2014</td><td>0</td><td>0</td></tr><tr><td>July-Dec 2014</td><td>0</td><td>0</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	0	Jan-June 2013	0	0	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	1	0	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	0	0	July-Dec 2012	0	0	Jan-June 2013	1	0	July-Dec 2013	0	0	Jan-June 2014	0	0	July-Dec 2014	0	0	
Semiannual Period	Kiln 1	Kiln 2																																											
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July-Dec 2013	0	0																																											
Jan-June 2014	0	0																																											
July-Dec 2014	0	0																																											
6	<p>40 CFR § 63.1206(c)(5) – Combustion system leaks. (i) <i>Combustion system leaks of hazardous air pollutants must be controlled by:</i></p> <p>(B) <i>Maintaining the maximum combustion zone pressure lower than ambient pressure using an instantaneous monitor...</i></p> <p>40 CFR § 63.1209(p) – Maximum combustion chamber pressure. <i>If you comply with the requirements for combustion system leaks under §63.1206(c)(5) by maintaining the maximum combustion chamber zone pressure lower than ambient pressure to prevent combustion systems leaks from hazardous waste combustion, you must perform instantaneous monitoring of pressure and the automatic waste feed cutoff system must be engaged when</i></p>	<p>Norlite failed to maintain the maximum combustion zone pressure lower than ambient pressure at all times that hazardous waste was in the combustion chamber of the kilns.</p> <p>According to Norlite’s CPT/NOC, Norlite complies with the requirements of 40 CFR § 63.1206(c)(5)(i)(B) for controlling combustion system leaks of hazardous air pollutants (HAPs) by maintaining the maximum combustion zone pressure lower than ambient pressure using an instantaneous monitor. In addition, Norlite has installed a double-walled fugitive emission containment system on the kilns. The emissions capturing system (interstitial chamber) pressure will be kept at or below -0.08 inches water column (in. w.c.) on an HRA basis with an AWFCO should the HRA exceed -0.08 in. w.c. The following additional operational conditions apply:</p> <ul style="list-style-type: none">• The front end pressure shall remain at or below -0.05 in. w.c. If the front end instantaneous pressure continuously exceeds -0.05 in.w.c. for more than 3.0 seconds, an AWFCO shall occur immediately.• If the front end instantaneous pressure continuously exceeds 0.00 in. w.c. for more than 1.0 second, then an AWFCO shall occur immediately.	<p>Appendix CAA A – Comprehensive Performance Test and Notification of Compliance</p> <p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>																																										

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence																					
	<i>negative pressure is not adequately maintained.</i>	<ul style="list-style-type: none">If the emissions capturing system (interstitial chamber) instantaneous pressure reaches or exceeds 0.00 in. w.c. continuously for more than 1.0 second, then an AWFCO shall occur immediately.If at any time the instantaneous front end pressure and the emissions capturing system pressure reach or exceed 0.00 in. w.c. at the same time, then an AWFCO shall occur immediately. <p>NEIC evaluated the instantaneous 1-minute continuous monitoring data related to the kiln pressure. NEIC considered any time that the instantaneous pressure was greater than or equal to 0 in w.c., relative to the ambient pressure while the MRA hazardous waste feed rate was greater than 1 gpm, to be an exceedance of the standard.</p> <p>Additionally, NEIC excluded exceedances that occurred during time periods reported (in the semiannual reports) as startup or shutdown of the kiln, as well as malfunctions for the specific parameter being analyzed.</p> <p>Total Number of Instances the Specified Operating Parameter Limit Was Exceeded by Semiannual Period</p> <p>Maximum kiln hood pressure: 0 in. w.c.</p> <table><tr><th>Semiannual Period</th><th>Kiln 1</th><th>Kiln 2</th></tr><tr><td>Jan-June 2012</td><td>4</td><td>0</td></tr><tr><td>July-Dec 2012</td><td>4</td><td>1</td></tr><tr><td>Jan-June 2013</td><td>0</td><td>1</td></tr><tr><td>July-Dec 2013</td><td>5</td><td>2</td></tr><tr><td>Jan-June 2014</td><td>1</td><td>3</td></tr><tr><td>July-Dec 2014</td><td>1</td><td>6</td></tr></table>	Semiannual Period	Kiln 1	Kiln 2	Jan-June 2012	4	0	July-Dec 2012	4	1	Jan-June 2013	0	1	July-Dec 2013	5	2	Jan-June 2014	1	3	July-Dec 2014	1	6	
Semiannual Period	Kiln 1	Kiln 2																						
Jan-June 2012	4	0																						
July-Dec 2012	4	1																						
Jan-June 2013	0	1																						
July-Dec 2013	5	2																						
Jan-June 2014	1	3																						
July-Dec 2014	1	6																						
7	<p>40 CFR § 63.1206 – When and how must you comply with the standards and operating requirements?</p> <p>(b) Compliance with standards—(1) Applicability. The emission standards and operating requirements set forth in this subpart apply at all times except:</p>	<p>In addition to the instances listed in the areas of noncompliance described above, Norlite exceeded the emission standards during periods reported as startup, shutdown, and/or malfunction. Norlite was not following the operating procedures in the facility’s SSM plan during these instances.</p> <p>For the areas of noncompliance described above, NEIC conducted the data analysis by excluding all times that Norlite reported periods of SSM, because the emission standards of Hazardous Waste Combustor MACT EEE apply at all times except during SSM events and when there is no hazardous waste in the combustion chamber. Any emission exceedance that occurs during startup or</p>	<p>Appendix CAA B – Kiln Data Analysis Results</p> <p>Appendix CAA C – Semiannual Reports 2012 – 2014</p>																					

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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p>(i) <i>During periods of startup, shutdown, and malfunction; and</i></p> <p>(ii) <i>When hazardous waste is not in the combustion chamber...</i></p> <p>40 CFR § 63.1206(c)(2)(v)(B) – <i>Compliance with AWFCO requirements when burning hazardous waste during startup and shutdown. (1) If you feed hazardous waste during startup or shutdown, you must include waste feed restrictions (e.g., type and quantity), and other appropriate operating conditions and limits in the startup, shutdown, and malfunction plan.</i></p> <p>(2) <i>You must interlock the operating limits you establish under paragraph (c)(2)(v)(B)(1) of this section with the automatic waste feed cutoff system required under §63.1206(c)(3), except for paragraphs (c)(3)(v) and (c)(3)(vi) of this section.</i></p> <p>(3) <i>When feeding hazardous waste during startup or shutdown, the automatic waste feed cutoff system must immediately and automatically cutoff the hazardous waste feed if you exceed the operating limits you establish under paragraph (c)(2)(v)(B)(1) of this section, except as provided by paragraph (c)(3)(viii) of this section.</i></p> <p>(4) <i>Although the automatic waste feed cutoff requirements of this paragraph apply during startup and shutdown, an exceedance of an emission standard or</i></p>	<p>shutdown is not considered an exceedance of the standard as long as the facility's SSM plan was followed.</p> <p>However, according to Norlite's SSM plan (which references specific standard operating procedures (SOPs)), hazardous waste feed must be cut off prior to shutting down the kiln and the air pollution control equipment must remain operating while the kiln is shutting down. These shutdown SOPs apply during both routine and emergency shutdowns of the kiln.</p> <p>Likewise, during both cold and warm startups of the kiln, according to the SSM plan and referenced SOPs, the kiln must be fully up to the required temperature and the air pollution control devices must be fully operational before hazardous waste can be introduced into the kiln.</p> <p>Therefore, if the SSM plan is followed during startups and shutdowns, it should not be allowable for OPL exceedances to occur while hazardous waste is in the combustion chamber.</p> <p>Additionally, Norlite has been reporting malfunctions in both semiannual reports and excessive exceedance reports. Many of the reported malfunctions do not appear to meet the definition of malfunction (See Area of Concern B).</p> <p>Because of the concerns with SSM events, NEIC also analyzed the continuous monitoring data without excluding the times that Norlite reported as SSM events. NEIC also analyzed the data including startups and shutdowns, but excluding malfunctions, because it was not possible for NEIC to determine which reported malfunctions should actually be considered true malfunctions. Additional exceedances were observed when the data was analyzed using these criteria (Appendix CAA B).</p>	<p>Appendix CAA D – Startup, Shutdown, and Malfunction Plan</p> <p>Appendix CAA E – MACT Standard Operating Procedures</p> <p>Appendix CAA F – Excessive Exceedance Reports 2012–2014</p>

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<i>operating limit is not a violation of this subpart if you comply with the operating procedures prescribed in the startup, shutdown, and malfunction plan.</i>		
	AREAS OF CONCERN		
A		<p>The CPT used to establish the OPLs was only conducted for Kiln 1.</p> <p>Kiln 2 is designed to be similar or possibly identical to Kiln 1 and, according to Norlite representatives, it is cost-prohibitive to conduct a comprehensive performance test on both kilns. Norlite may be required to conduct a comprehensive performance test on both kilns.</p>	Appendix CAA A – Comprehensive Performance Test and Notification of Compliance
B	<p>§63.1206(c)(3) - Automatic waste feed cutoff (AWFCO) - (i) General. <i>Upon the compliance date, you must operate the hazardous waste combustor with a functioning system that immediately and automatically cuts off the hazardous waste feed, except as provided by paragraph (c)(3)(viii) of this section:</i></p> <p>(vi) Excessive exceedance reporting. <i>(A) For each set of 10 exceedances of an emission standard or operating requirement while hazardous waste remains in the combustion chamber (i.e., when the hazardous waste residence time has not transpired since the hazardous waste feed was cutoff) during a 60-day block period, you must submit to the Administrator a written report within 5 calendar days of the 10th exceedance documenting the exceedances and results of the investigation and corrective measures taken.</i></p>	<p>Norlite is including every instance that the AWFCO is triggered toward the 10-instance limit within each 60-day period for the purposes of filing the required excessive exceedance report.</p> <p>Norlite filed many excessive exceedance reports during the time frame investigated by NEIC (2012-2014). Within those reports, Norlite lists every instance that the AWFCO was triggered. If 10 or more AWFCOs occurred within a 60-day period, the facility filed an excessive exceedance report.</p> <p>However, the requirement to file an excessive exceedance report only applies to the instances when OPLs (emission standards) were exceeded during those AWFCO events. A review of the submitted excessive exceedance reports revealed that during a majority of the time, the OPLs were not exceeded when the AWFCOs were triggered.</p> <p>Norlite appears to be submitting unnecessary reports, leading to the appearance of major operational problems with the kilns. The exceedances included in the report are related to instances when the AWFCO was actually working properly, thereby not causing violations of the OPLs.</p>	Appendix CAA F – Excessive Exceedance Reports 2012 – 2014
C	<p>40 CFR § 63.2 – Definitions</p> <p><i>Malfunction means any sudden, infrequent, and not reasonably</i></p>	<p>Norlite has been reporting many malfunctions of the rotary kilns, causing the AWFCO to trigger. Upon inspection of the exceedance reports and inspection of the source, many of the reported exceedances do not appear to meet the definition of malfunction.</p>	Appendix CAA D – Semiannual Reports 2012 –

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p><i>preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.</i></p> <p>40 CFR § 63.1206 – When and how must you comply with the standards and operating requirements?</p> <p><i>(b) Compliance with standards—(1) Applicability. The emission standards and operating requirements set forth in this subpart apply at all times except:</i></p> <p><i>(i) During periods of startup, shutdown, and malfunction; and</i></p> <p><i>(ii) When hazardous waste is not in the combustion chamber...</i></p> <p><i>2) Methods for determining compliance. The Administrator will determine compliance with the emission standards of this subpart as provided by §63.6(f)(2).</i></p> <p>40 CFR § 63.6(f)(2)(ii) – The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator’s conformance with operation and maintenance requirements, including the evaluation</p>	<p>Norlite is required to submit semiannual reports that include startups, shutdowns, and malfunctions, as well as emission standard exceedances.</p> <p>In addition, Norlite is required to submit excessive exceedance reports whenever there are 10 exceedances of an emission standard or operating requirement while hazardous waste remains in the combustion chamber during a 60-day block period. Norlite submitted multiple excessive exceedance reports during the time frame investigated (2012 through 2014).</p> <p>Each excessive exceedance report submitted by Norlite contains a narrative page that describes the cause and corrective action taken for a majority of the malfunctions for that 60-day period. NEIC reviewed each excessive exceedance report and evaluated whether the majority of the malfunctions were truly malfunctions, or if they were possibly issues related to poor operation and maintenance.</p> <p>Because the emission standards are not applicable during periods of startup, shutdown, and malfunction, Norlite may be designating exceedances of the emission standard as malfunctions, when they possibly should be considered violations of the emission standards.</p> <p>One example is that the operator of each kiln is able to manually adjust the hazardous waste feed rate in order to produce clinker (the finished product) of desired size, which is dependent on the temperature within the kiln. The feed rate is adjusted using a knob that opens and closes a ball valve controlling the hazardous waste feed rate. Many of the reported malfunctions related to exceeding the maximum hazardous waste feed rate are because the operator opened the valve too high, causing the AWFCO to trigger.</p> <p>Another example is that the optical flow sensor that is used to measure the air flow rate continues to “malfunction” due to a film forming on the sensor. This issue is resolved after cleaning the sensor, but Norlite continues to experience this problem and report it as a malfunction. It appears this issue is related to maintenance (not cleaning the sensor frequently enough) rather than a malfunction.</p> <p>Finally, there are instances reported as malfunctions of the caustic scrubber due to buildup of soda ash within the scrubber. Increasing the water flow to the</p>	<p>2014</p> <p>Appendix CAA F – Excessive Exceedance Reports 2012 – 2014</p> <p>Appendix CAA G– NEIC Excessive Exceedance Evaluation</p>

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<i>of monitoring data, as specified in 63.6(e) and applicable subparts of this part.</i>	scrubber results in washing out the soda ash buildup. Again, this appears to be maintenance related, rather than a malfunction. Additional examples can be found in Appendix CAA G	
D	<p>40 CFR § 63.1206(c)(8) – Bag leak detection system requirements. (i) <i>If your combustor is equipped with a baghouse (fabric filter), you must continuously operate either:</i></p> <p>(A) <i>A bag leak detection system that meets the specifications and requirements of paragraph (c)(8)(ii) of this section and you must comply with the corrective measures and notification requirements of paragraphs (c)(8)(iii) and (iv) of this section; or</i></p> <p>(B) <i>A particulate matter detection system under paragraph (c)(9) of this section.</i></p> <p>(ii) <i>Bag leak detection system specification and requirements. (A) The bag leak detection system must be certified by the manufacturer to be capable of continuously detecting and recording particulate matter emissions at concentrations of 1.0 milligrams per actual cubic meter unless you demonstrate, under §63.1209(g)(1), that a higher detection limit would routinely detect particulate matter loadings during normal operations;</i></p> <p>(B) <i>The bag leak detection system shall provide output of relative or absolute particulate matter loadings;</i></p>	<p>It appears the baghouse is possibly not operated with functional bag leak detection systems or designed to alarm when particulate matter is detected.</p> <p>Norlite is required to submit an excessive exceedance report any time there are 10 exceedances of an emission standard or operating requirement while hazardous waste remains in the combustion chamber during a 60-day block period. Norlite submitted multiple excessive exceedance reports during the time frame investigated (2012 – 2014).</p> <p>According to Norlite’s CPT/NOC (section 3.3.3.3), the baghouse is equipped with a bag leak detection system. The system is a BHA Group, Inc. CPM-750 Particulate Detection System that is fully certified to comply with the EPA bag leak detection system guidelines of responding to mass emissions at concentrations of 1.0 milligrams per cubic meter (mg/m³).</p> <p>Norlite has been reporting in its excessive exceedance reports some failures of the scrubber pH monitors or buildup of particulate within the scrubbers. Upon investigation of the cause, Norlite determined the failures to be the result of particulate loading because of damaged bags in the baghouse.</p> <p>See reports dated 6/19/2013, 8/26/2013, 9/12/2013, 3/3/2014, 11/14/2014, and 11/17/2014.</p>	Appendix CAA F – Excessive Exceedance Reports 2012 – 2014

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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p><i>(C) The bag leak detection system shall be equipped with an alarm system that will sound an audible alarm when an increase in relative particulate loadings is detected over a preset level;</i></p> <p><i>(iii) Bag leak detection system corrective measures requirements. The operating and maintenance plan required by paragraph (c)(7) of this section must include a corrective measures plan that specifies the procedures you will follow in the case of a bag leak detection system alarm or malfunction. The corrective measures plan must include, at a minimum, the procedures used to determine and record the time and cause of the alarm or bag leak detection system malfunction in accordance with the requirements of paragraph (c)(8)(iii)(A) of this section as well as the corrective measures taken to correct the control device or bag leak detection system malfunction or to minimize emissions in accordance with the requirements of paragraph (c)(8)(iii)(B) of this section. Failure to initiate the corrective measures required by this paragraph is failure to ensure compliance with the emission standards in this subpart.</i></p> <p><i>(A) You must initiate the procedures used to determine the cause of the alarm or bag leak detection system malfunction within 30 minutes of the time the alarm first sounds; and</i></p> <p><i>(B) You must alleviate the cause of the alarm or bag leak detection system malfunction by taking the necessary</i></p>		

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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p><i>corrective measure(s) which may include, but are not to be limited to, the following:</i></p> <p><i>(1) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions;</i></p> <p><i>(2) Sealing off defective bags or filter media;</i></p> <p><i>(3) Replacing defective bags or filter media, or otherwise repairing the control device;</i></p> <p><i>(4) Sealing off a defective baghouse compartment;</i></p> <p><i>(5) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; or</i></p> <p><i>(6) Shutting down the combustor.</i></p>		
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) Lorna Goodnight (303) 462-9306 and Jackie Vega (303) 462-9260			
	AREAS OF NONCOMPLIANCE		
1.	<p>Part 373 Permit Module I – General Provisions – (D)(9) – <i>The Permittee must comply with all applicable requirements of 6NYCRR 373-2.27, 373-2.28 and 373-2.29...</i></p> <p>6 NYCRR 373-2.28(h) [40 CFR § 264.1057] – <i>(1) Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods</i></p>	<p>Norlite is calibrating the photoionization detectors (PID) used for RCRA Subpart BB monitoring with zero air gas and 1,001 ppm n-hexane (Appendix RCRA C). Calibration gases do not include “A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.”</p> <p>According to discussions with and documents provided by Norlite, a Photovac 2020 ProPlus Micro PID is used for the required quarterly RCRA Subpart BB monitoring. According to monitoring records for all quarters of 2012, 2013, and 2014, provided by Norlite, calibrations are performed using zero air and 1,001</p>	<p>Appendix RCRA B – 373 Permit (Page 24)</p> <p>Appendix RCRA C – Calibration Portions of 2012 to 2014</p>

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p><i>specified in paragraph 373-2.28(n)(2) and shall comply with paragraphs (2) through (5) of this subdivision, except as provided in paragraphs (6), (7), and (8) of this subdivision, and subdivisions 373-2.28(l) and 373-2.28(m).</i></p> <p><i>(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.</i></p> <p>6 NYCRR Section 373-2.28(n)(2) [40 CFR § 264.1063(b)] – Leak detection monitoring, as required in subdivisions 373-2.28(c) through 373-2.28(m), shall comply with the following requirements:...</p> <p><i>(iv) Calibration gases shall be:</i></p> <p><i>('a') Zero air (less than 10 ppm of hydrocarbon in air).</i></p> <p><i>('b') A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.</i></p>	<p>ppm n-hexane. Norlite monitors the tank/agitator interfaces on all 10 low-grade fuel storage tanks in the LGF building weekly for fugitive volatile organic compounds (VOCs). All components are surveyed once per year; valves and pumps are surveyed each quarter. According to the 2014 fourth quarterly <i>Fugitive VOC Emission Survey Screening Report</i>, 457 valves, 14 pumps, and 14 agitators are monitored under RCRA Subpart BB (Appendix RCRA D).</p>	<p>Fugitive VOC Emission Survey Screening Quarterly Reports</p> <p>Appendix RCRA D – 2014 4th Quarterly Fugitive VOC Emission Survey Screening Report (page 3)</p>
2.	<p>6 NYCRR Section 373-2.25(d)(11)(i) [40 CFR § 264.1033(k)(1) (as referenced by 40 CFR § 264.1087(b)(2))] – A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in paragraph 373-2.27(e)(2) of this section...</p> <p>6 NYCRR Section 373-2.27(e)(2) [40 CFR § 264.1034(b) (as referenced by 40 CFR § 264.1033(l) as referenced by 40 CFR § 264.1087(b)(4))] – When a closed-vent system is tested for compliance with no detectable</p>	<p>Norlite is calibrating the PID used for RCRA Subpart CC monitoring with zero air gas and 1,001 ppm n-hexane. Calibration gases do not include “A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.”</p> <p>The same instruments used for RCRA Subpart BB monitoring are used for RCRA Subpart CC monitoring and current calibration practices are discussed in detail in the Area of Noncompliance 1 (Appendices RCRA E, F, and G).</p>	<p>Appendix RCRA E – 2012 Subpart CC Monitoring Records</p> <p>Appendix RCRA F – 2013 Subpart CC Monitoring Records</p> <p>Appendix RCRA G – 2014 Subpart CC Monitoring Records</p>

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#	Regulatory Citation	Findings/Supporting Notes	Evidence																							
	<i>emissions, as required in paragraph 373-2.27(d)(12) of this section, the test shall comply with the following requirements:...</i> <i>(iv) Calibration gases shall be:</i> <i>('a') Zero air (less than 10 ppm of hydrocarbon in air).</i> <i>('b') A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.</i>																									
3.	Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (D)(2) – <i>The Permittee shall control fugitive emissions from the combustion zone and the back end of the LWAK by continuously maintaining a negative kiln pressure at the hood of the kiln... If the hood pressure operating limit specified in the table below is exceeded, the permittee shall immediately & automatically cutoff hazardous waste (i.e. LLGF) feed to the kiln...</i>	Norlite failed to maintain a negative kiln pressure at all times while hazardous waste was being fed to the kilns. Norlite’s Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (D)(3) states: <table><tr><th>Operating Parameters</th><th>Averaging Period</th><th>Alarm Set-point</th><th>Automatic Waste Cutoff Limit</th><th>Monitoring/Recording Frequency</th></tr><tr><td>Kiln (i.e. Hood) pressure, “wg</td><td>INST</td><td>-0.08</td><td>>-0.05</td><td>Monitor Continuously & record maximum reading in a minute every minute</td></tr></table> NEIC evaluated the instantaneous (15-second) continuous monitoring data related to the kiln pressure and hazardous waste (LGF) flow rate for each kiln from 2012 to 2014. The following table includes times that the instantaneous pressure was greater than 0, and the instantaneous hazardous waste feed rate was greater than 1 gpm (Appendix RCRA H). Norlite was in violation of the standard a total of 8.75 minutes over the 35 times it was out of compliance from 2012 to 2014. <table><tr><th colspan="3">2012 – 2014 Times when the kiln pressure was greater than 0 while LGF flow greater was than 1 gpm</th></tr><tr><td rowspan="2">2012</td><td>Kiln 1</td><td>8</td></tr><tr><td>Kiln 2</td><td>2</td></tr><tr><td rowspan="2">2013</td><td>Kiln 1</td><td>11</td></tr><tr><td>Kiln 2</td><td>6</td></tr></table>	Operating Parameters	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit	Monitoring/Recording Frequency	Kiln (i.e. Hood) pressure, “wg	INST	-0.08	>-0.05	Monitor Continuously & record maximum reading in a minute every minute	2012 – 2014 Times when the kiln pressure was greater than 0 while LGF flow greater was than 1 gpm			2012	Kiln 1	8	Kiln 2	2	2013	Kiln 1	11	Kiln 2	6	Appendix RCRA B – 373 Permit (Pages 112 and 114) Appendix RCRA H – 2012 to 2014 Kiln Pressure Exceedances
Operating Parameters	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit	Monitoring/Recording Frequency																						
Kiln (i.e. Hood) pressure, “wg	INST	-0.08	>-0.05	Monitor Continuously & record maximum reading in a minute every minute																						
2012 – 2014 Times when the kiln pressure was greater than 0 while LGF flow greater was than 1 gpm																										
2012	Kiln 1	8																								
	Kiln 2	2																								
2013	Kiln 1	11																								
	Kiln 2	6																								

Table 1. SUMMARY OF FINDINGS
Norlite, LLC
Cohoes, New York

#	Regulatory Citation	Findings/Supporting Notes				Evidence																															
		2014	Kiln 1	2																																	
			Kiln 2	6																																	
			Total	35																																	
4.	Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (D)(2) – <i>The Permittee shall control fugitive emissions from the combustion zone and the back end of the LWAK by... maintaining the baghouse pressure drop below the maximum operating limit as specified in Condition D.3 of this module...</i>	Norlite failed to maintain the baghouse pressure drop above the automatic waste cutoff limit at all times that hazardous waste was in the combustion chamber. Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (D)(3) states: <table><tr><th>Operating Parameters</th><th>Averaging Period</th><th>Alarm Set-point</th><th>Automatic Waste Cutoff Limit</th><th>Monitoring/Recording Frequency</th></tr><tr><td>Baghouse pressure drop, wg</td><td>HRA</td><td><5.6</td><td><5.1</td><td>Monitor Continuously & record HRA every minute</td></tr></table> NEIC evaluated the HRA continuous monitoring data related to the baghouse pressure drop and the instantaneous (15-second) hazardous waste (LGF) flow rate for each kiln from 2012 to 2014. NEIC considered any time that the baghouse pressure drop was below than 5.1, while the instantaneous hazardous waste feed rate was greater than 1 gpm, to be a violation of the standard (Appendix RCRA I). Norlite was in violation of the standard a total of 9 minutes over the 36 times it was out of compliance from 2012 to 2014. <table><tr><th colspan="3">2012 – 2014 Times when the baghouse pressure drop was less than 5.1 while LGF flow greater than 1 gpm</th></tr><tr><td rowspan="2">2012</td><td>Kiln 1</td><td>0</td></tr><tr><td>Kiln 2</td><td>0</td></tr><tr><td rowspan="2">2013</td><td>Kiln 1</td><td>2</td></tr><tr><td>Kiln 2</td><td>0</td></tr><tr><td rowspan="2">2014</td><td>Kiln 1</td><td>1</td></tr><tr><td>Kiln 2</td><td>33</td></tr><tr><td colspan="2">Total</td><td>36</td></tr></table>				Operating Parameters	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit	Monitoring/Recording Frequency	Baghouse pressure drop, wg	HRA	<5.6	<5.1	Monitor Continuously & record HRA every minute	2012 – 2014 Times when the baghouse pressure drop was less than 5.1 while LGF flow greater than 1 gpm			2012	Kiln 1	0	Kiln 2	0	2013	Kiln 1	2	Kiln 2	0	2014	Kiln 1	1	Kiln 2	33	Total		36	Appendix RCRA B – 373 Permit (Pages 112 and 114) Appendix RCRA I – 2012 to 2014 Baghouse Pressure Drop Below Limit
Operating Parameters	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit	Monitoring/Recording Frequency																																	
Baghouse pressure drop, wg	HRA	<5.6	<5.1	Monitor Continuously & record HRA every minute																																	
2012 – 2014 Times when the baghouse pressure drop was less than 5.1 while LGF flow greater than 1 gpm																																					
2012	Kiln 1	0																																			
	Kiln 2	0																																			
2013	Kiln 1	2																																			
	Kiln 2	0																																			
2014	Kiln 1	1																																			
	Kiln 2	33																																			
Total		36																																			
5.	Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (C)(2) – <i>No LLGF or combination of LLGF &</i>	Based on data provided by Norlite, NEIC determined the following instances when at least 1 gpm on an HRA and/or minute rolling average (MRA) was being fed to the kilns and the design thermal capacity of 62M BTU/hr per kiln on an HRA was exceeded.				Appendix RCRA B – 373 Permit (Page 105)																															

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence																																				
	<i>other feeds (except raw shale) listed in condition C(l) above, as fed to the LWAKs, shall exceed the design thermal capacity of 62M BTU/hr per kiln on an hourly rolling average basis.</i>	<p>NEIC evaluated the MRA and HRA continuous monitoring data of each kiln's flow rate of hazardous waste (LGF) and the total BTU based on an HRA for each kiln from 2012 to 2014. The following table includes times that the HRA total BTU, and the MRA and/or HRA hazardous waste feed rate was greater than 1 gpm (Appendix RCRA J). Norlite was in violation of the standard, based on HRA, a total of 43 minutes from 2012 to 2014. Norlite was in violation of the standard, based on MRA, a total of 12 minutes from 2012 to 2014.</p> <table border="1"> <thead> <tr> <th colspan="4">2012 – 2014 Times when the kiln BTU per hour was greater than 62 million while LGF flow greater than 1 gpm (HRA and/or MRA)</th></tr> <tr> <th></th><th></th><th>LGF HRA</th><th>LGF MRA</th></tr> </thead> <tbody> <tr> <td>2012</td><td>Kiln 1</td><td>9</td><td></td></tr> <tr> <td></td><td>Kiln 2</td><td>9</td><td></td></tr> <tr> <td>2013</td><td>Kiln 1</td><td>10</td><td>4</td></tr> <tr> <td></td><td>Kiln 2</td><td>6</td><td>3</td></tr> <tr> <td>2014</td><td>Kiln 1</td><td>2</td><td>1</td></tr> <tr> <td></td><td>Kiln 2</td><td>7</td><td>4</td></tr> <tr> <td></td><td>Total</td><td>43</td><td>12</td></tr> </tbody> </table>	2012 – 2014 Times when the kiln BTU per hour was greater than 62 million while LGF flow greater than 1 gpm (HRA and/or MRA)						LGF HRA	LGF MRA	2012	Kiln 1	9			Kiln 2	9		2013	Kiln 1	10	4		Kiln 2	6	3	2014	Kiln 1	2	1		Kiln 2	7	4		Total	43	12	<p>Appendix RCRA J – 2012 to 2014 Kiln BTU Per Hour Exceedances</p>
2012 – 2014 Times when the kiln BTU per hour was greater than 62 million while LGF flow greater than 1 gpm (HRA and/or MRA)																																							
		LGF HRA	LGF MRA																																				
2012	Kiln 1	9																																					
	Kiln 2	9																																					
2013	Kiln 1	10	4																																				
	Kiln 2	6	3																																				
2014	Kiln 1	2	1																																				
	Kiln 2	7	4																																				
	Total	43	12																																				
6.	<p>Part 373 Permit Attachment C – Waste Analysis Plan –Requirements – C-6(c) – On-site Generated Wastes – <i>Wastes generated on-site are characterized at least annually. They are typically characterized when generated if they are to be reintroduced to Norlite's process or when they are shipped offsite to an authorized treatment facility.</i></p> <p>6 NYCRR Section 372.2(a)(3) – EPA identification numbers... <i>(ii) A generator must not offer hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number.</i></p> <p>40 CFR § 262.10(h) – An owner or operator who initiates a shipment of</p>	<p>Socket filters, spent carbon, and spent sand from the sand filter, generated from the on-site WWTP, are managed as nonhazardous waste. At the time of the NEIC inspection, no analytical data were available for the wastes. These waste streams are listed hazardous wastes and may be characteristic hazardous waste.</p> <p>The on-site WWTP receives waste waters from the scrubbers associated with the kilns, which burn characteristic and listed hazardous wastes. The scrubber waster contains metals, HCl, and SO₂. The WWTP also receives stormwater that has contacted process areas of the facility.</p> <p>Waste codes handled at the facility in 2014 are listed in Appendix RCRA K, the 2014 Annual Hazardous Waste Report.</p> <p>At times when the kilns are burning listed hazardous wastes, the scrubber wastewater is listed hazardous waste. 40 CFR § 261.3(c)(2)(i) states the following: <i>Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste.</i> RCRA</p>	<p>Appendix RCRA B – 373 Permit (page 251)</p> <p>Appendix RCRA K – 2014 Annual Hazardous Waste Report (page 4)</p>																																				

Table 1. SUMMARY OF FINDINGS
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p><i>hazardous waste from a treatment, storage, or disposal facility must comply with the generator standards established in this part.</i></p> <p>6 NYCRR Section 372.2(a)(2) [40 CFR § 262.11] - <i>Hazardous waste determination. A person who generates a solid waste must determine if that waste is a hazardous waste...</i></p>	<p>Online (RO) 11500 memo further specifies: <i>If listed wastes are burned, all residues that are generated carry the waste codes of the listed waste from which they are derived... When deciding which Land Disposal Restriction standard applies to residuals such as scrubber water (assuming that the treated residues are destined for some form of land disposal), your decision must be based on the hazardous waste designation before incineration.</i></p> <p>Solid wastes generated from the treatment of the listed scrubber water are also listed hazardous wastes. RO 13541 memo states: <i>...solid waste resulting from the treatment of a listed hazardous waste in an exempt WWTU will remain a listed hazardous waste...</i></p> <p>Sock filters, sand filters, and carbon filters are considered spent and replaced based on pressure drops in the WWTP. The sand filter is replaced approximately every 6 months; the carbon filter is replaced approximately every 2 years; and the sock filter are replaced approximately every 2 months.</p>	
7.	<p>Part 373 Permit Attachment C – Waste Analysis Plan –Requirements – C-6(c) – On-site Generated Wastes – <i>Wastes generated on-site are characterized at least annually. They are typically characterized when generated if they are to be reintroduced to Norlite's process or when they are shipped offsite to an authorized treatment facility.</i></p> <p>6 NYCRR Section 372.2(a)(2) [40 CFR § 262.11] – <i>Hazardous waste determination. A person who generates a solid waste must determine if that waste is a hazardous waste...</i></p>	<p>Wastes generated by the on-site laboratory instruments and other wastes generated from analyses are processed through tanks and in the on-site kilns. No analytical data were available for these waste streams.</p> <p>The on-site laboratory analyzes samples of shale from the on-site quarry, fuels received from off-site containing various contaminants, baghouse dust, multiclone dust, clinker, discharge from the on-site WWTP, and filter cake generated by the on-site WWTP. The on-site laboratory also performs occasional analyses for other Tradebe locations, which may not have the same certifications as this Tradebe location's on-site laboratory.</p> <p>Instruments used and analysis performed in the on-site laboratory include: inductively coupled plasma mass spectrometer (ICP) for detection of heavy metals, gas chromatographer (GC) for polychlorinated biphenyls (PCB) detection, atomic absorption, bomb calorimeter for BTUs, flash point, muffle furnace to determine ash content, pH, specific gravity, toxicity characteristic leaching procedure (TCLP) for metals (including mercury), and titration to detect halogens and compatibility (on oxidizers and peroxides). Hydrochloric acid and nitric acid are used in analyses requiring digestion.</p> <p>Two ICPs are used in the laboratory. One is used for analyzing WWTP samples, and the other is used for analyzing fuels samples. Each ICP has two waste containers; one collects material discharged by the instrument, and the other</p>	<p>Appendix RCRA B – 373 Permit (page 251)</p>

Table 1. SUMMARY OF FINDINGS
Norlite, LLC
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#	Regulatory Citation	Findings/Supporting Notes	Evidence
		<p>collects the portion of leftover digested sample that was not analyzed by the instrument. These wastes contain water, acid, and sample material.</p> <p>The mercury analyzer requires acid digestion, using 5 percent hydrochloric acid and 5 percent nitric acid (HNO₃). Potassium permanganate and potassium persulfate are also used in sample preparations. This analysis generates two waste containers; one collects material discharged by the instrument, and the other collects the portion of leftover digested sample that was not analyzed by the instrument. These wastes contain water, acid, and sample material.</p> <p>The halogen titration analysis wastes contain silver nitrate mixed with the material to be sampled.</p> <p>PCB analyses generates wastes containing sample material, hexane, acetone, and sulfuric acid.</p> <p>In the fuels area, the laboratory wastes are consolidated into drums and then vacuumed into tank 200A with other fuels drums received from off-site. Tank 200A is sampled before its contents are burned in the kilns.</p> <p>Samples analyzed in the on-site laboratory include materials rejected by Norlite because they are not suitable for management in the on-site kilns, and samples from another Tradebe location.</p> <p>Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (C)(8) states: <i>The Permittee shall not accept and/or burn the following:</i></p> <ul style="list-style-type: none"> (a) <i>Listed hazardous waste containing pesticides and/or herbicides or characteristics hazardous waste codes D012 to D017, D020 and D031.</i> (b) <i>Hazardous Wastes, Off-specification used oil, Waste Fuel A, Band non-hazardous wastes with total PCBs (defined as the sum of the quantified Arochlors using Method 8082) greater than 25 ppm or any regulated PCBs wastes as defined in 6NYCRR 371 and 40 CFR Part 761. The Permittee shall provide written notice to the Department of any LLGF, off-Specification used oil fuel or Waste Fuel A shipment received with a total PCBs greater than 10 ppm within 24 hours of receipt of the analytical results.</i> (c) <i>Hazardous Wastes, On-specification used oil, Off-specification used oil, Waste Fuel A, B and non-hazardous wastes containing polychlorodibenzo-p-dioxins (PCDD), polychlorodibenzo-p-furans</i> 	

Table 1. SUMMARY OF FINDINGS
Norlite, LLC
Cohoes, New York

#	Regulatory Citation	Findings/Supporting Notes	Evidence
		<p>(PCDF) or hazardous wastes with the following waste codes: F020, F021, F022, F023, F026, F027 and F028.</p> <p>(d) Hazardous waste prohibited from thermal treatment pursuant to 6 NYCRR 376.1(c)(3), this permit and its attachments.</p> <p>(e) Waste Fuel B-2 as defined in 6NYCRR Part 225-2.2(b)(10).</p> <p>(f) Radioactive mixed waste.</p>	
8.	<p>Part 373 Permit Attachment C – Waste Analysis Plan –Requirements – C-6(c) – On-site Generated Wastes – Wastes generated on-site are characterized at least annually. They are typically characterized when generated if they are to be reintroduced to Norlite's process or when they are shipped offsite to an authorized treatment facility.</p> <p>6 NYCRR Section 373-2.5(b) [40 CFR § 262.10(h)] – A treatment, storage or disposal facility shipping hazardous wastes off-site or offering hazardous wastes for shipment off-site must comply with all generator standards as specified in section 372.2 of this Title.</p> <p>6 NYCRR Section 372.2(a)(2) [40 CFR § 262.11] – Hazardous waste determination. A person who generates a solid waste must determine if that waste is a hazardous waste...</p>	<p>Wastes such as personal protective equipment and other solids, generated by the on-site laboratory, are managed as nonhazardous wastes.</p> <p>Norlite analyzes both characteristic and listed hazardous wastes in the on-site laboratory. On-site generated samples include shale, blended fuels, and WWTP discharge. Incoming fuels, including hazardous wastes generated off-site, and samples from another Tradebe location, are also analyzed in the on-site laboratory.</p> <p>Solids contaminated with listed hazardous wastes carry the listing and all associated waste codes. RO 11839 memo states: ...according to 40 CFR 261.3(d) (2), any material which is a listed waste (under 40 CFR Part 261, subpart D), contains a listed waste, or is derived from a listed waste is itself a hazardous waste unless it has been delisted or granted some other form of regulatory exclusion... RO12917 memo, more specifically addressing protective gear used during analysis, states: the associated wastes in question include... protective gear, etc. which were used during analysis. These wastes are not covered by the provisions of Section 261.4(d). Rather, these materials... contain a listed hazardous waste (i.e., protective gear) and must be managed as if it were... hazardous waste. However, if the material that contain listed hazardous waste are decontaminated such that they no longer contain the listed waste, they are no longer subject to Subtitle C regulations. Although the volume of listed hazardous waste contained in the debris may be small, RO11327 states: There is no de minimus amount below which a listed waste need not be identified.</p> <p>Solid wastes generated by the laboratory are bulked on-site into drums then sent to Tradebe's Bridgeport, Connecticut, facility on a bill of lading as nonhazardous wastes.</p> <p>This waste stream includes: gloves, test tubes, filters, pipets and paper towels.</p> <p>Norlite analyzed solids generated by the on-site laboratory in 2008 (Appendix RCRA L) and 2010 (Appendix RCRA M) for corrosivity, ignitability, reactive</p>	<p>Appendix RCRA B – 373 Permit (Page 251)</p> <p>Appendix RCRA L – Laboratory Waste Solids Analytical 2008</p> <p>Appendix RCRA M – Laboratory Waste Solids Analytical 2010</p>

Table 1. SUMMARY OF FINDINGS
Norlite, LLC
Cohoes, New York

#	Regulatory Citation	Findings/Supporting Notes	Evidence																					
		cyanide, reactive sulfide, reactivity, TCLP metals, herbicides, pesticides, semivolatiles, and volatiles. The 2008 analysis also included PCBs. Analyses showed no constituents above the toxicity characteristic limit.																						
	AREAS OF CONCERN																							
A.	<p>Part 373 Permit Module I – General Provisions – (D)(9) – <i>The Permittee must comply with all applicable requirements of 6NYCRR 373-2.27, 373-2.28 and 373-2.29...</i></p> <p>6 NYCRR Section 373-2.28(i)(3)(i) [40 CFR § 264.1058(c)(1)] - <i>When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 373-2.28(j).</i></p> <p>6 NYCRR Section 373-2.28(i) [40 CFR § 264.1058(a)] – (1)... <i>flanges and other connectors shall be monitored within 5 days by the method specified in 273-2.28(n)(2) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. (2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.</i></p> <p>6 NYCRR Section 373-3.29(e)(4)(ix) (as referenced by 6 NYCRR Section 373-2.29(d)(2)(iv)) [40 CFR § 265.1084(d)(9) (as referenced by 40 CFR 264.1083(d))] - <i>For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less</i></p>	<p>During the on-site inspection, NEIC performed leak detection and repair (LDAR) monitoring and found three leaking connectors and one agitator operating with detectable emissions. NEIC’s May 27, 2015 (Appendix RCRA N) email to Norlite requested copies of “Any documentation of maintenance or work performed based on the results of the LDAR monitoring performed by NEIC during the inspection (repair records for leaking equipment)” as well as additional information/documents. Norlite’s response to the email did not include any information or documents relating to maintenance or work performed based on the results of the NEIC LDAR monitoring event.</p> <p>The following leaks were observed during NEIC LDAR monitoring:</p> <table><tr><th colspan="3">Connectors</th></tr><tr><th>Component Identifier (Location)</th><th>Monitoring Frequency</th><th>Monitored Value (ppm)</th></tr><tr><td>V1303 (Tank 600 flange)</td><td>Annually (Appendix RCRA D, page 196)</td><td>20,000</td></tr><tr><td>10594 (Tank 400 flange)</td><td>Annually (Appendix RCRA D, page 101)</td><td>10,500</td></tr></table> <table><tr><th colspan="3">Agitator</th></tr><tr><th>Component Identifier (Location)</th><th>Monitoring Frequency</th><th>Monitored Value (ppm)</th></tr><tr><td>20492 (Tank 100C agitator)</td><td>Quarterly (Appendix RCRA D, page 144)</td><td>12,000</td></tr></table>	Connectors			Component Identifier (Location)	Monitoring Frequency	Monitored Value (ppm)	V1303 (Tank 600 flange)	Annually (Appendix RCRA D, page 196)	20,000	10594 (Tank 400 flange)	Annually (Appendix RCRA D, page 101)	10,500	Agitator			Component Identifier (Location)	Monitoring Frequency	Monitored Value (ppm)	20492 (Tank 100C agitator)	Quarterly (Appendix RCRA D, page 144)	12,000	<p>Appendix RCRA B – 373 Permit (Page 24)</p> <p>Appendix RCRA N – NEIC May 27, 2015, Email</p> <p>Appendix RCRA D – 2014 4th Quarterly Fugitive VOC Emission Survey Screening Report</p>
Connectors																								
Component Identifier (Location)	Monitoring Frequency	Monitored Value (ppm)																						
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10594 (Tank 400 flange)	Annually (Appendix RCRA D, page 101)	10,500																						
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Table 1. SUMMARY OF FINDINGS
Norlite, LLC
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#	Regulatory Citation	Findings/Supporting Notes	Evidence																					
	<i>than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.</i>	<div>The following elevated readings were observed during NEIC LDAR monitoring:<table><tr><th colspan="3">Connectors</th></tr><tr><th>Component Identifier (Location)</th><th>Monitoring Frequency</th><th>Monitored Value (ppm)</th></tr><tr><td>10576 (Tank 300 flange)</td><td>Annually (Appendix RCRA D, page 100)</td><td>1,500</td></tr><tr><td>V1159 (Tank 300 valve)</td><td>Annually (Appendix RCRA D, page 189)</td><td>940</td></tr><tr><td>V1171 (Tank 300 coupler)</td><td>Annually (Appendix RCRA D, page 190)</td><td>800</td></tr><tr><td>B1344 (Tank 500/600 (nitrogen system valve)</td><td></td><td>2,000</td></tr><tr><td>Kiln 2 filter basket in EQ room</td><td></td><td>618</td></tr></table></div> <div>During NEIC LDAR monitoring, 156 valves, 38 flanges, 11 pumps, 14 agitators, and 424 connectors were monitored.</div> <div>The instrument used during NEIC’s LDAR monitoring was not calibration-precision tested as is required by Reference Method 21 of 40 CFR Part 60, Appendix A, which is referenced by; 40 CFR § 264.1058(a), for flanges and other connectors; and 40 CFR § 265.1084(d)(1) (as referenced by 40 CFR 264.1083(d)), for agitators (seals around a rotating shaft).</div>	Connectors			Component Identifier (Location)	Monitoring Frequency	Monitored Value (ppm)	10576 (Tank 300 flange)	Annually (Appendix RCRA D, page 100)	1,500	V1159 (Tank 300 valve)	Annually (Appendix RCRA D, page 189)	940	V1171 (Tank 300 coupler)	Annually (Appendix RCRA D, page 190)	800	B1344 (Tank 500/600 (nitrogen system valve)		2,000	Kiln 2 filter basket in EQ room		618	
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B.	Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (C)(1) – <i>The Permittee may feed... LLGF (i.e. liquid hazardous waste as described in Attachment C of this permit) from the front end of the kiln...</i>	Leftover sample volume from wastes that were rejected for on-site management are processed through tanks and in the on-site kilns. Wastes accepted for on-site management are sampled and analyzed in the on-site laboratory prior to waste acceptance. Norlite is prohibited by its RCRA Part B permit from processing certain materials in the on-site kilns (Appendices RCRA B and O).	Appendix RCRA B – 373 Permit (pages 105, 107, and 233) Appendix																					

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#	Regulatory Citation	Findings/Supporting Notes	Evidence
	<p>Part 373 Permit Attachment C – Waste Analysis Plan –Requirements – C-5(f) – Combustion prohibition for inorganic wastes – As part of the waste characterization process described in this plan, Norlite will ensure compliance with the dilution prohibition as a substitute for treatment requirements. Listed in Appendix 54 of 6 NYCRR 376 are hazardous wastes for which combustion is inappropriate and, therefore, prohibited. Norlite will not accept for combustion any wastes listed in this appendix unless, the waste, at the point of generation or after bona fide treatment (such as cyanide destruction prior to combustion), specifically meets one of the exceptions found in 6 NYCRR 376.l(c) (8) (i) through (vi).</p> <p>6 NYCRR 376 § Appendix 54 – Metal bearing wastes prohibited from dilution in a combustion unit according to paragraph 6 NYCRR 376.1(c)(3) of this Title – Appendix XI to 40 CFR Part 268, as of July 1, 2002, is incorporated by reference as if fully set forth herein...</p>	<p>Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (C)(8) states: <i>The Permittee shall not accept and/or burn the following:</i></p> <ul style="list-style-type: none"> (a) Listed hazardous waste containing pesticides and/or herbicides or characteristics hazardous waste codes D012 to D017, D020 and D031. (b) Hazardous Wastes, Off-specification used oil, Waste Fuel A, Band non-hazardous wastes with total PCBs (defined as the sum of the quantified Arochlors using Method 8082) greater than 25 ppm or any regulated PCBs wastes as defined in 6NYCRR 371 and 40 CFR Part 761. The Permittee shall provide written notice to the Department of any LLGF, off-Specification used oil fuel or Waste Fuel A shipment received with a total PCBs greater than 10 ppm within 24 hours of receipt of the analytical results. (c) Hazardous Wastes, On-specification used oil, Off-specification used oil, Waste Fuel A, B and non-hazardous wastes containing polychlorodibenzo-p-dioxins (PCDD), polychlorodibenzo-p-furans (PCDF) or hazardous wastes with the following waste codes: F020, F021, F022, F023, F026, F027 and F028. (d) Hazardous waste prohibited from thermal treatment pursuant to 6 NYCRR 376.1(c)(3), this permit and its attachments. (e) Waste Fuel B-2 as defined in 6NYCRR Part 225-2.2(b)(10). (f) Radioactive mixed waste. 	<p>RCRA O – 40 CFR Part 268 Appendix XI</p>
C.		<p>The maximum feed rate referenced in Module I of the permit is 10.3 gpm, without reference to an HRA, while recording requirements and waste feed cutoff limits (Module V) are based on an HRA. All requirements of the permit and averaging periods should be consistent to avoid confusion. NYSDEC views Norlites feed rate limit as 10.3 gpm based on an HRA.</p> <p>Part 373 Permit Module I – General Provisions – (A)(4) states (Appendix RCRA B): <i>Maximum quantity/rate of 10.3 gallons/minute/ kiln of Hazardous waste (LLGF) feed rate to kiln...</i></p>	<p>Appendix RCRA B – 373 Permit (pages 15 and 113)</p> <p>Appendix RCRA P – 2012 to 2014 Kiln LGF Feed Exceedances</p>

Table 1. SUMMARY OF FINDINGS
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Cohoes, New York

#	Regulatory Citation	Findings/Supporting Notes	Evidence																																
		<p>Part 373 Permit Module V – Light Weight Aggregate Kilns (LWAKs) Requirements EP1 and EP2 – (D)(3) states (Appendix RCRA B):</p> <table><tr><th><i>Operating Parameters</i></th><th><i>Averaging Period</i></th><th><i>Automatic Waste Cutoff Limit</i></th><th><i>Monitoring/Recording Frequency</i></th></tr><tr><td><i>Hazardous Waste (LLGF) feed rate, gpm</i></td><td><i>HRA</i></td><td><i>>10.3 gpm (HRA)</i></td><td><i>Monitor Continuously & record HRA every minute</i></td></tr></table> <p>Appendix RCRA P shows minutes when the low grade fuel minute flow rate was greater than 10.3 gpm. Included in Appendix RCRA P are the HRAs for which the LGF feed rate is greater than 10.3 gpm. The following table gives the total number of recorded minutes from 2012 to 2014 when 10.3 gpm was exceeded. Norlite’s LGF feed rate was greater than 10.3 gpm, based on minute flow rate, approximately 263 hours from 2012 to 2014.</p> <table><tr><th colspan="3">2012 – 2014 Times when the LGF minute flow rate exceeded 10.3 gpm</th></tr><tr><td>2012</td><td>Kiln 1</td><td>3,967</td></tr><tr><td></td><td>Kiln 2</td><td>3,829</td></tr><tr><td>2013</td><td>Kiln 1</td><td>2,566</td></tr><tr><td></td><td>Kiln 2</td><td>2,422</td></tr><tr><td>2014</td><td>Kiln 1</td><td>1,731</td></tr><tr><td></td><td>Kiln 2</td><td>1,269</td></tr><tr><td></td><td>Total</td><td>15,784</td></tr></table>	<i>Operating Parameters</i>	<i>Averaging Period</i>	<i>Automatic Waste Cutoff Limit</i>	<i>Monitoring/Recording Frequency</i>	<i>Hazardous Waste (LLGF) feed rate, gpm</i>	<i>HRA</i>	<i>>10.3 gpm (HRA)</i>	<i>Monitor Continuously & record HRA every minute</i>	2012 – 2014 Times when the LGF minute flow rate exceeded 10.3 gpm			2012	Kiln 1	3,967		Kiln 2	3,829	2013	Kiln 1	2,566		Kiln 2	2,422	2014	Kiln 1	1,731		Kiln 2	1,269		Total	15,784	
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